



10-552388_ST25
SEQUENCE LISTING

<110> Ross, Richard
Sayers, Jon
Artymiuk, Peter

<120> Cytokine Polypeptides and Antibodies Containing A Signal Sequence for the Attachment of Glycosylphosphatidylinositol

<130> 100042.59316US

<140> 10/552,388
<141> 2005-10-07

<150> PCT/GB04/001572
<151> 2004-04-07

<150> GB 0324235.1
<151> 2003-10-16

<150> GB 0308088.4
<151> 2003-04-09

<160> 29

<170> PatentIn version 3.5

<210> 1
<211> 794
<212> DNA
<213> Artificial Sequence

<220>
<223> fusion protein comprising growth hormone fused to domain comprising glycosylphosphatidylinositol

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<212> PRT
<213> Artificial Sequence

<220>
<223> fusion protein comprising growth hormone fused to a
glycosylphosphatidylinositol domain

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Asp Ala His Met Phe Pro Thr Ile Pro Leu Ser Arg Leu Phe Asp Asn
20 25 30

Ala Ser Leu Arg Ala His Arg Leu His Gln Leu Ala Phe Asp Thr Tyr
35 40 45

Gln Glu Phe Glu Glu Ala Tyr Ile Pro Lys Glu Gln Lys Tyr Ser Phe
50 55 60

Leu Gln Asn Pro Gln Thr Ser Leu Cys Phe Ser Glu Ser Ile Pro Thr
65 70 75 80

Pro Ser Asn Arg Glu Glu Thr Gln Gln Lys Ser Asn Leu Glu Leu Leu
85 90 95

Arg Ile Ser Leu Leu Leu Ile Gln Ser Trp Leu Glu Pro Val Gln Phe
100 105 110

Leu Arg Ser Val Phe Ala Asn Ser Leu Val Tyr Gly Ala Ser Asp Ser
115 120 125

Asn Val Tyr Asp Leu Leu Lys Asp Leu Glu Glu Gly Ile Gln Thr Leu
130 135 140

Met Gly Arg Leu Glu Asp Gly Ser Pro Arg Thr Gly Gln Ile Phe Lys
145 150 155 160

Gln Thr Tyr Ser Lys Phe Asp Thr Asn Ser His Asn Asp Asp Ala Leu
165 170 175

Leu Lys Asn Tyr Gly Leu Leu Tyr Cys Phe Arg Lys Asp Met Asp Lys
180 185 190

Val Glu Thr Phe Leu Arg Ile Val Gln Cys Arg Ser Val Glu Gly Ser
195 200 205

Cys Gly Phe Gly Gly Gly Asp Ile Asp Lys Leu Val Lys Cys Gly
210 215 220

Gly Ile Ser Leu Leu Val Gln Asn Thr Ser Trp Met Leu Leu Leu Leu
225 230 235 240

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<210> 3
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 <213> Artificial Sequence

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 <223> fusion protein comprising growth hormone fused to growth hormone receptor

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<213> Artificial Sequence

<220>
<223> fusion protein comprising growth hormone fused to growth hormone receptor

<400> 4

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Asp Ala His Met Phe Pro Thr Ile Pro Leu Ser Arg Leu Phe Asp Asn
20 25 30

Ala Ser Leu Arg Ala His Arg Leu His Gln Leu Ala Phe Asp Thr Tyr
35 40 45

Gln Glu Phe Glu Glu Ala Tyr Ile Pro Lys Glu Gln Lys Tyr Ser Phe
50 55 60

Leu Gln Asn Pro Gln Thr Ser Leu Cys Phe Ser Glu Ser Ile Pro Thr
65 70 75 80

Pro Ser Asn Arg Glu Glu Thr Gln Gln Lys Ser Asn Leu Glu Leu Leu
85 90 95

Arg Ile Ser Leu Leu Ile Gln Ser Trp Leu Glu Pro Val Gln Phe
100 105 110

Leu Arg Ser Val Phe Ala Asn Ser Leu Val Tyr Gly Ala Ser Asp Ser
115 120 125

Asn Val Tyr Asp Leu Leu Lys Asp Leu Glu Glu Gly Ile Gln Thr Leu
130 135 140

Met Gly Arg Leu Glu Asp Gly Ser Pro Arg Thr Gly Gln Ile Phe Lys
145 150 155 160

Gln Thr Tyr Ser Lys Phe Asp Thr Asn Ser His Asn Asp Asp Ala Leu
165 170 175

Leu Lys Asn Tyr Gly Leu Leu Tyr Cys Phe Arg Lys Asp Met Asp Lys
180 185 190

Val Glu Thr Phe Leu Arg Ile Val Gln Cys Arg Ser Val Glu Gly Ser
195 200 205

Cys Gly Phe Gly Gly Arg Gly Gly Gly Ser Gly Gly Gly Ser
210 215 220

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Gly Gly Gly Gly ser Gly Gly Gly Ser Glu Phe Phe Ser Gly Ser
225 230 235 240

Glu Ala Thr Ala Ala Ile Leu Ser Arg Ala Pro Trp Ser Leu Gln Ser
245 250 255

Val Asn Pro Gly Leu Lys Thr Asn Ser Ser Lys Glu Pro Lys Phe Thr
260 265 270

Lys Cys Arg Ser Pro Glu Arg Glu Thr Phe Ser Cys His Trp Thr Asp
275 280 285

Glu Val His His Gly Thr Lys Asn Leu Gly Pro Ile Gln Leu Phe Tyr
290 295 300

Thr Arg Arg Asn Thr Gln Glu Trp Thr Gln Glu Trp Lys Glu Cys Pro
305 310 315 320

Asp Tyr Val Ser Ala Gly Glu Asn Ser Cys Tyr Phe Asn Ser Ser Phe
325 330 335

Thr Ser Ile Trp Ile Pro Tyr Cys Ile Lys Leu Thr Ser Asn Gly Gly
340 345 350

Thr Val Asp Glu Lys Cys Phe Ser Val Asp Glu Ile Val Gln Pro Asp
355 360 365

Pro Pro Ile Ala Leu Asn Trp Thr Leu Leu Asn Val Ser Leu Thr Gly
370 375 380

Ile His Ala Asp Ile Gln Val Arg Trp Glu Ala Pro Arg Asn Ala Asp
385 390 395 400

Ile Gln Lys Gly Trp Met Val Leu Glu Tyr Glu Leu Gln Tyr Lys Glu
405 410 415

Val Asn Glu Thr Lys Trp Lys Met Met Asp Pro Ile Leu Thr Thr Ser
420 425 430

Val Pro Val Tyr Ser Leu Lys Val Asp Lys Glu Tyr Glu Val Arg Val
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Arg Ser Lys Gln Arg Asn Ser Gly Asn Tyr Gly Glu Phe Ser Glu Val
450 455 460

Leu Tyr Val Thr Leu Pro Gln Met Ser Gln Phe Thr Cys Glu Glu Asp
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Phe Tyr Gly Gly Gly Asp Ile Asp Lys Leu Val Lys Cys Gly Gly
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Ile Ser Leu Leu Val Gln Asn Thr Ser Trp Met Leu Leu Leu Leu Leu
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<211> 1442
<212> DNA
<213> Artificial Sequence

<220>
<223> fusion protein comprising growth hormone fused to growth hormone

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cagagtctat tccgacacccc tccaaacaggg agggaaacaca acagaaatcc aacctagagc 960
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ga 1442

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<211> 470
<212> PRT
<213> Artificial Sequence

<220>
<223> fusion protein comprising growth hormone fused to growth hormone

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Asp Ala His Met Phe Pro Thr Ile Pro Leu Ser Arg Leu Phe Asp Asn
20 25 30

Ala Ser Leu Arg Ala His Arg Leu His Gln Leu Ala Phe Asp Thr Tyr
35 40 45

Gln Glu Phe Glu Glu Ala Tyr Ile Pro Lys Glu Gln Lys Tyr Ser Phe
50 55 60

Leu Gln Asn Pro Gln Thr Ser Leu Cys Phe Ser Glu Ser Ile Pro Thr
65 70 75 80

Pro Ser Asn Arg Glu Glu Thr Gln Gln Lys Ser Asn Leu Glu Leu Leu
85 90 95

Arg Ile Ser Leu Leu Leu Ile Gln Ser Trp Leu Glu Pro Val Gln Phe
100 105 110

Leu Arg Ser Val Phe Ala Asn Ser Leu Val Tyr Gly Ala Ser Asp Ser
115 120 125

Asn Val Tyr Asp Leu Leu Lys Asp Leu Glu Glu Gly Ile Gln Thr Leu
130 135 140

Met Gly Arg Leu Glu Asp Gly Ser Pro Arg Thr Gly Gln Ile Phe Lys
145 150 155 160

Gln Thr Tyr Ser Lys Phe Asp Thr Asn Ser His Asn Asp Asp Ala Leu
165 170 175

Leu Lys Asn Tyr Gly Leu Leu Tyr Cys Phe Arg Lys Asp Met Asp Lys
180 185 190

Val Glu Thr Phe Leu Arg Ile Val Gln Cys Arg Ser Val Glu Gly Ser
195 200 205

Cys Gly Phe Gly Gly Arg Gly Gly Gly Ser Gly Gly Gly Ser
210 215 220

Gly Gly Gly Ser Gly Gly Gly Ser Glu Phe Phe Pro Thr Ile
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225	230	235	240
Pro Leu Ser Arg Leu Phe Asp Asn Ala Ser Leu Arg Ala His Arg Leu			
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His Gln Leu Ala Phe Asp Thr Tyr Gln Glu Phe Glu Glu Ala Tyr Ile			
260	265	270	
Pro Lys Glu Gln Lys Tyr Ser Phe Leu Gln Asn Pro Gln Thr Ser Leu			
275	280	285	
Cys Phe Ser Glu Ser Ile Pro Thr Pro Ser Asn Arg Glu Glu Thr Gln			
290	295	300	
Gln Lys Ser Asn Leu Glu Leu Leu Arg Ile Ser Leu Leu Leu Ile Gln			
305	310	315	320
Ser Trp Leu Glu Pro Val Gln Phe Leu Arg Ser Val Phe Ala Asn Ser			
325	330	335	
Leu Val Tyr Gly Ala Ser Asp Ser Asn Val Tyr Asp Leu Leu Lys Asp			
340	345	350	
Leu Glu Glu Gly Ile Gln Thr Leu Met Gly Arg Leu Glu Asp Gly Ser			
355	360	365	
Pro Arg Thr Gly Gln Ile Phe Lys Gln Thr Tyr Ser Lys Phe Asp Thr			
370	375	380	
Asn Ser His Asn Asp Asp Ala Leu Leu Lys Asn Tyr Gly Leu Leu Tyr			
385	390	395	400
Cys Phe Arg Lys Asp Met Asp Lys Val Glu Thr Phe Leu Arg Ile val			
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Gln Cys Arg Ser Val Glu Gly Ser Cys Gly Phe Gly Gly Gly Asp			
420	425	430	
Ile Asp Lys Leu Val Lys Cys Gly Gly Ile Ser Leu Leu Val Gln Asn			
435	440	445	
Thr Ser Trp Met Leu Leu Leu Leu Ser Leu Ser Leu Leu Gln Ala			
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<210> 7
 <211> 29
 <212> DNA
 <213> Artificial Sequence

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<220>
 <223> growth hormone receptor primer
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<210> 8
 <211> 29
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> growth hormone receptor primer
 <400> 8
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<210> 9
 <211> 30
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> primer amplification of human growth hormone
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<210> 10
 <211> 38
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> primer amplification of human growth hormone
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<210> 11
 <211> 42
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> primer for linking growth hormone and growth hormone receptor to
 glycosylphosphatidylinositol domain

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 <211> 50
 <212> PRT
 <213> Homo sapiens

<400> 12
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Pro Thr Ser Thr Pro Glu Glu Thr Glu Ala Pro Ser Ser Ala Thr Thr
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25

30

Leu Ile Ser Pro Leu Ser Leu Ile Val Ile Phe Ile Ser Phe Val Leu
35 40 45

Leu Ile
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<210> 13
<211> 39
<212> PRT
<213> Homo sapiens

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Tyr Asn Ser Glu Gly Glu Ser Ala Glu Phe Phe Phe Leu Leu Ile Leu
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Leu Leu Leu Leu Val Leu Val
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<211> 27
<212> PRT
<213> Homo sapiens

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<220>
<223> Linker peptide for linking growth hormone with growth hormone
receptor

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<211> 6
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<210> 19
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<213> Artificial Sequence

<220>
<223> cleavage sequence

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<211> 60
<212> DNA
<213> homo sapiens

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<210> 22
<211> 20
<212> PRT
<213> Homo sapiens

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1 5 10 15

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Asp Ala His Met
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<212> DNA
<213> Homo Sapiens

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aagtattcat tcctgcagaa cccccagacc tccctctgtt tctcagagtc tattccgaca 180
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<211> 191
<212> PRT
<213> Homo Sapiens

<400> 24

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Glu Ala Tyr Ile Pro Lys Glu Gln Lys Tyr Ser Phe Leu Gln Asn Pro
35 40 45

Gln Thr Ser Leu Cys Phe Ser Glu Ser Ile Pro Thr Pro Ser Asn Arg
50 55 60

Glu Glu Thr Gln Gln Lys Ser Asn Leu Glu Leu Leu Arg Ile Ser Leu
65 70 75 80

Leu Leu Ile Gln Ser Trp Leu Glu Pro Val Gln Phe Leu Arg Ser Val
85 90 95

Phe Ala Asn Ser Leu Val Tyr Gly Ala Ser Asp Ser Asn Val Tyr Asp
100 105 110

Leu Leu Lys Asp Leu Glu Glu Gly Ile Gln Thr Leu Met Gly Arg Leu
115 120 125

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Glu Asp Gly Ser Pro Arg Thr Gly Gln Ile Phe Lys Gln Thr Tyr Ser
130 135 140

Lys Phe Asp Thr Asn Ser His Asn Asp Asp Ala Leu Leu Lys Asn Tyr
145 150 155 160

Gly Leu Leu Tyr Cys Phe Arg Lys Asp Met Asp Lys Val Glu Thr Phe
165 170 175

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<211> 132
<212> DNA
<213> Homo sapiens

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atttctctgt ga 132

<210> 26
<211> 38
<212> PRT
<213> Homo Sapiens

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Ile Asp Lys Leu Val Lys Cys Gly Gly Ile Ser Leu Leu Val Gln Asn
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Thr Ser Trp Met Leu Leu Leu Leu Leu Ser Leu Ser Leu Leu Gln Ala
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Leu Asp Phe Ile Ser Leu
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<210> 27
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> linker sequence between promoter and initiation codon

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ggatcctcta gactcgaggt cctacaggt 29

<210> 28
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<212> DNA
<213> Artificial Sequence

<220>

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<223> Linker between GH protein and GPI anchor

<400> 28

ggcggtggag gggat

15

<210> 29

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> Linker between GH protein and GPI anchor

<400> 29

Gly Gly Gly Gly Asp
1 5